

STANFORD UNIVERSITY MEDICAL CENTER

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STANFORD UNIVERSITY SCHOOL OF MEDICINE  
Department of Genetics  
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May 20, 1977

Dr. Michael Bernstein  
7507 Girard Ave  
College Park, MD 20750

Dear Dr. Bernstein,

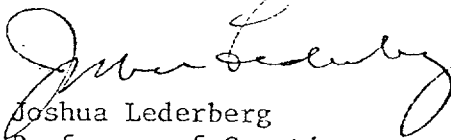
I enjoyed our interesting conversation over the telephone. But I am not sure what tangible materials I should be sending you, without some clarity about your present objectives. You should read Bill Hayes' monograph "The Genetics of Bacteria and Their Viruses" as a general introduction to the biological landscape here, even though this predates the current "Recombinant DNA" technology.

More specifically on the choice of *E. coli* K12 to become the *Drosophila* of bacterial genetics, the groundwork before this was already laid in the late 1930's with : the development of simple synthetic media for cultivating this organism, and the fact that it had already outdistanced most potential competitors in the cumulative volume of physiological research already done at that time. The fact that it was already so widespread in an apparently harmless association with man appeared to be a strong argument in favor of that choice, and I think that one needs to know quite a lot about the speciation of pathogenic forms of this organism which tend to have quite special attributes before challenging that tacit assumption. It would be difficult even today to insist very strongly on any alternative, since we would simply be opening the door to possible new discoveries, both about the biological interrelationships of bacteria, and their ecological relationships with man and other species about which we really do not know a great deal. I do not think that this lack of perfect knowledge is a tenable argument to suspend all microbiological research.

The choice of the particular strain, K12, was one of Tatum's many serendipities. That story has been told many times, but never completely, and I hope to go into more detail about it in the historical essays that, as I mentioned to you over the phone, I have been working on recently. I will be sending you some excerpts from these, a couple of reprints that seem to touch most closely to your questions, and the most relevant couple of pages of Barbara Bachmann's review. Besides that article, there have been several others on the genetics of *E. coli* and related organisms that you should find by thumbing back through the last several years of *Bacteriological Reviews*.

When you come down to some more concrete questions, or wish to discuss your overall directions, I would be happy to continue the dialog.

Sincerely yours,

  
Joshua Lederberg  
Professor of Genetics

LT. J. P. KENNEDY, JR. LABORATORIES FOR MOLECULAR MEDICINE, DEDICATED TO RESEARCH IN MENTAL RETARDATION

MOLECULAR BIOLOGY

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